

157954

**SEARCH REQUEST FORM** Scientific and Technical Information Center - EIC2800  
 Rev. 3/15/2004 This is an experimental format. Please give suggestions or comments to Jeff Harrison, JEP-4B68, 272-2511.

Date 4/29/05 Serial # 09/805,027 Priority Application Date 3/12/01

Your Name M. Lewis Examiner # \_\_\_\_\_

AU 2822 Phone 272-1831 Room 5A30

In what format would you like your results? Paper is the default. PAPER DISK EMAIL

If submitting more than one search, please prioritize in order of need. Need before 7/6

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

Where have you searched so far on this case? 05-20-05 10:33

Circle: USPT DWPI EPO Abs JPO Abs IBM TDB

Other: \_\_\_\_\_

What relevant art have you found so far? Please attach pertinent citations or Information Disclosure Statements. \_\_\_\_\_

What types of references would you like? Please checkmark:

Primary Refs ☒ Nonpatent Literature \_\_\_\_\_ Other \_\_\_\_\_  
 Secondary Refs ☒ Foreign Patents \_\_\_\_\_  
 Teaching Refs \_\_\_\_\_

What is the topic, such as the **novelty**, motivation, utility, or other specific facets defining the desired **focus** of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

Claims 1-3, 5-7, 9 & 10

Problem: See pages 2-5  
Solution: " " " 6

claims 12/10/04

Focus on the multi-layer barrier liner in claim 1 and the materials that are disclosed in claims 2 & 3. The →

Staff Use Only

Searcher: HARRISON

Searcher Phone: 22511

Searcher Location: STIC-EIC2800, JEP-4B68

Date Searcher Picked Up: 7/6/05

Date Completed: 7/7/05

Searcher Prep/Rev Time: 63

Online Time: 103

Type of Search

Structure (#) \_\_\_\_\_

Bibliographic ☒ \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

Vendors

STN ☒ \_\_\_\_\_

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Lexis-Nexis \_\_\_\_\_

WWW/Internet \_\_\_\_\_

Other \_\_\_\_\_

FILE 'REGISTRY' ENTERED AT 08:20:17 ON 07 JUL 2005

L1 1 S TUNGSTEN/CN

L2 454 S N.TA/MF OR N TA/ELF

L3 3076 S N.TI/MF OR N TI/ELF

L4 1 S ALUMINUM/CN

L5 1 S COPPER/CN

FILE 'HCAPLUS' ENTERED AT 08:21:51 ON 07 JUL 2005

L6 1175 S L1(L) (STUD OR STUDD##### OR PILLAR? OR  
POST OR PIN OR COLUMN OR PLUG OR PLUGG####)

FILE 'HCAPLUS' ENTERED AT 08:22:10 ON 07 JUL 2005

L7 3965 S L1(L) (CONTACT OR VIA OR CONDUCTOR)

FILE 'HCAPLUS' ENTERED AT 08:23:30 ON 07 JUL 2005

L8 5678 S L1(L) (LINER OR LINING OR COATING OR  
BARRIER OR BUFFER OR LINED OR COATED)

FILE 'HCAPLUS' ENTERED AT 08:24:17 ON 07 JUL 2005

L9 11272 S (W OR TUNGSTEN) (2A) (LINER OR LINING OR  
COATING OR BARRIER OR BUFFER OR LINED OR COATED)

FILE 'STNGUIDE' ENTERED AT 08:24:22 ON 07 JUL 2005

FILE 'HCAPLUS' ENTERED AT 08:24:57 ON 07 JUL 2005

L10 2470 S (W OR TUNGSTEN) (2A) (STUD OR STUDD##### OR  
PILLAR? OR POST OR PIN OR COLUMN OR PLUG OR PLUGG####)

FILE 'STNGUIDE' ENTERED AT 08:25:01 ON 07 JUL 2005

FILE 'HCAPLUS' ENTERED AT 08:25:37 ON 07 JUL 2005

L11 1458 S (W OR TUNGSTEN) (2A) (INTERLAYER? OR  
INTERCONNECT?)

FILE 'HCAPLUS' ENTERED AT 08:25:51 ON 07 JUL 2005

L12 1887 S L1(L) (INTERLAYER? OR INTERCONNECT?)

FILE 'STNGUIDE' ENTERED AT 08:25:55 ON 07 JUL 2005

FILE 'HCAPLUS' ENTERED AT 08:27:27 ON 07 JUL 2005

L13 2827 S L6 OR L10

FILE 'STNGUIDE' ENTERED AT 08:27:30 ON 07 JUL 2005

FILE 'HCAPLUS' ENTERED AT 08:28:38 ON 07 JUL 2005

L14 12292 S (L2 OR L3) (L) (LINER OR LINING OR COATING  
OR BARRIER OR BUFFER OR LINED OR COATED)

FILE 'STNGUIDE' ENTERED AT 08:28:45 ON 07 JUL 2005

FILE 'HCAPLUS' ENTERED AT 08:29:35 ON 07 JUL 2005

L15 50037 S (TAN OR NITRIDE OR TANTALUM OR TI OR TA OR  
TITANIUM) (2A) (LINER OR LINING OR COATING OR BARRIER OR BUFFER  
OR LINED OR COATED)

FILE 'STNGUIDE' ENTERED AT 08:29:43 ON 07 JUL 2005

FILE 'HCAPLUS' ENTERED AT 08:30:32 ON 07 JUL 2005

E PHYSICAL VAPOR DEPOSITION/CT  
E E3+ALL/CT

L16 13063 S VAPOR DEPOSITION PROCESS(L) PHYS OR PVD OR

## PHYSICAL###(2A)DEPOSIT#####

FILE 'STNGUIDE' ENTERED AT 08:31:32 ON 07 JUL 2005

FILE 'HCAPLUS' ENTERED AT 08:32:32 ON 07 JUL 2005

L17 17366 S L4(L) (MULTILAYER? OR STACK##### OR  
BILAYER##### OR LAYER#####)

FILE 'HCAPLUS' ENTERED AT 08:32:42 ON 07 JUL 2005

L18 2253 S L4(L) PATTERN?

FILE 'HCAPLUS' ENTERED AT 08:32:49 ON 07 JUL 2005

L19 2401 S L5(L) PATTERN?

FILE 'HCAPLUS' ENTERED AT 08:32:57 ON 07 JUL 2005

L20 17466 S L5(L) (MULTILAYER? OR STACK##### OR  
BILAYER##### OR LAYER#####)

L21 82522 S (CU OR COPPER) (6A) (AL OR ALUMINIUM)

L22 182779 S (CU OR COPPER OR AL OR ALUMINIUM) (4A) (FILM  
OR ?LAYER? OR ?COAT?)

L23 3559 S (L17 OR L18) AND (L19 OR L20)

L24 1042 S L21 AND L23

L25 2040 S L22 AND L23

L26 733 S L24 AND L25

L27 3 S L13 AND L26

L28 61 S (L14 OR L15) AND L26

L29 278 S (L14 OR L15) AND L13

L30 17 S (L7 OR L8 OR L9 OR L11 OR L12) AND L28

L31 217 S (L7 OR L8 OR L9 OR L11 OR L12) AND L29

L32 25 S L31 AND LINER

L33 8 S L31 AND STUD

L34 0 S L31 AND STUDD#####

L35 2833 S L2 AND L3

L36 1075 S L35 AND (L1 OR (L6 OR L7 OR L8 OR L9 OR  
L10 OR L11 OR L12 OR L13))

L37 154 S L36 AND ?PATTERN?

L38 1 S L37 AND STUD

L39 5 S L36 AND STUD

L40 0 S L36 AND STUDD#####

L41 427 S ((L26 OR L27 OR L28 OR L29 OR L30 OR L31  
OR L32 OR L33) OR (L37 OR L38 OR L39)) AND (LINER OR LINING OR  
BARRIER OR BUFFER)

L42 225 S ((L26 OR L27 OR L28 OR L29 OR L30 OR L31  
OR L32 OR L33) OR (L37 OR L38 OR L39)) AND (LINER OR LINING OR  
BARRIER OR BUFFER) (8A) (STUD OR STUDD##### OR PLUG##### OR  
PIN OR VIA OR CONDUCTOR OR COLUMN OR POST OR ?PILLAR?)

L43 46 S L42 AND (MULTI##### OR MULTIPLE OR  
LAMINA? OR STACK? OR SANDWICH? OR (TWO OR 2 OR 3 OR THREE OR  
DOUBLE OR TRIPLE OR BI OR TRI) (W) LAYER?)

L44 2 S L42 AND (BILAYER? OR TRILAYER?)

L45 51 S L42 AND ?PATTERN?

L46 146 S L28 OR L43 OR L45

L47 26 S L46 AND L1 AND (L2 OR L3) AND L4 AND L5

L48 2028 S L1 AND (L2 OR L3) AND (L4 OR L5)

L49 9 S L48 AND (STUD OR STUDD#####)

L50 79 S L48 AND (LINED OR LINER OR LINING)

L51 363 S L48 AND ?PATTERN?

L52 15 S L50 AND L51

L53 213 S (L50 OR L51) AND INTERCONNECT?

L54 84 S L53 AND L2 AND L3

L55 7 S L54 AND ADHE#####

L56 0 S L28 AND L45

L57 8 S L43 AND L45  
 L58 4 S L43 AND L28  
 L59 0 S L30 AND L31  
 L60 99 S L27 OR L30 OR L32 OR L33 OR L38 OR L39 OR  
 L44 OR L47 OR L49 OR L52 OR L55 OR L57 OR L58  
 L61 48 S L60 AND (LINED OR LINER OR LINING)  
 L62 18 S L60 AND STUD  
 L63 0 S L60 AND STUDD#####  
 L64 61 S L61 OR L62  
 D BIB AB HITSTR TOT  
 L65 240 S (CU OR COPPER) (6A)?PATTERN? AND ?PATTERN?(6  
 A) (AL OR ALUMINIUM)  
 L66 509 S (CU OR COPPER) (6A)?PATTERN? AND ?PATTERN?(6  
 A) (AL OR ALUMINIUM OR ALUMINUM)  
 L67 3 S L60 AND L66  
 L68 3 S L67 NOT L64  
 D ALL HITSTR TOT  
 L69 1463 S (L26 OR L27 OR L28 OR L29 OR L30 OR L31 OR  
 L32 OR L33) OR (L37 OR L38 OR L39 OR L40 OR L41 OR L42 OR L43  
 OR L44 OR L45 OR L46 OR L47) OR (L49 OR L50 OR L51 OR L52 OR  
 L53 OR L54 OR L55 OR L56 OR L57 OR L58 OR L59 OR L60 OR L61 OR  
 L62 OR L63 OR L64)  
 L70 39 S L69 AND L66  
 L71 13 S L1 AND L70  
 L72 7 S (L6 OR L7 OR L8 OR L9 OR L10 OR L11 OR L12  
 OR L13) AND L70  
 L73 14 S (L71 OR L72)  
 L74 11 S L73 NOT (L68 OR L64)  
 D ALL HITSTR TOT  
 L75 89 S (W OR TUNGSTEN) (2A) (STUD OR STUDD#####)  
 L76 82 S L75 NOT (L74 OR L68 OR L64)  
 L77 3 S L76 AND LINER  
 L78 0 S L76 AND LINING  
 L79 0 S L76 AND LINED  
 L80 0 S L76 AND L2 AND L3  
 L81 10 S L76 AND L4 AND L5  
 L82 7260 S (L2 OR L3) AND (L4 OR L5)  
 L83 1 S L76 AND L82  
 L84 1 S L76 AND (MULTI OR MULTIPLE) (2A) (FILM OR  
 ?COAT? OR ?LAYER? OR LINER OR LINING)  
 L85 3 S L76 AND MULTILAYER?  
 L86 1 S L76 AND BILAYER?  
 L87 0 S L76 AND TRILAYER?  
 L88 0 S L76 AND TRI LAYER?  
 L89 0 S L76 AND BI LAYER?  
 L90 17 S (L77 OR L78 OR L79 OR L80 OR L81) OR (L83  
 OR L84 OR L85 OR L86 OR L87 OR L88 OR L89)  
 D ALL HITSTR TOT

FILE 'STNGUIDE' ENTERED AT 09:48:37 ON 07 JUL 2005

FILE 'SCISEARCH' ENTERED AT 09:49:03 ON 07 JUL 2005

E STAMPER A K, 1998/RE

L91 53 S STAMPER A K?/RE  
 L92 10 S L91 AND (MULTI OR MULTIPLE OR TRI OR BI OR  
 DOUBLE OR TRIPLE OR TRILAYER? OR BILAYER? OR MULTILAYER?)  
 L93 1 S L91 AND (LINED OR LINER OR LINING)  
 L94 11 S (L92 OR L93)  
 D ALL TOT  
 L95 1 S L91 AND (W OR TUNGSTEN) (4A) (STUD OR  
 STUDD#####)  
 L96 0 S L95 NOT L94

FILE 'JICST-EPLUS' ENTERED AT 09:52:19 ON 07 JUL 2005

L97           2 S   (W OR TUNGSTEN) (2A) (STUD OR STUDD#####)  
              D ALL TOT

FILE 'DISSABS' ENTERED AT 09:52:32 ON 07 JUL 2005

L98           1 S   (W OR TUNGSTEN) (2A) (STUD OR STUDD#####)  
              D ALL

FILE 'INSPEC' ENTERED AT 09:52:54 ON 07 JUL 2005

L99           73 S   (W OR TUNGSTEN) (2A) (STUD OR STUDD#####)  
L100          43 S   L99 AND (CU OR COPPER OR DAMASC? OR  
              CU/CHI) AND (AL OR ALUMINUM OR ALUMINIUM OR AL/CHI)  
L101          26 S   L100 AND (LINER OR LINED OR LINING OR VIA  
              OR PLUG OR CONDUCTOR OR BARRIER)  
L102          0 S   L101 AND NITRIDE  
L103          1 S   L101 AND TAN  
L104          1 S   L101 AND TA  
L105          0 S   L101 AND TANTALUM  
L106          0 S   L101 AND TA/CHI  
L107          18 S   L101 AND (TI/CHI OR TITANIUM OR TI)  
L108          1 S   (L103 OR L104)  
              D ALL TOT  
L109          13 S   (L101 OR L102 OR L103 OR L104 OR L105 OR  
              L106 OR L107) AND (CU OR COPPER OR DAMASC?) (6A) (AL OR ALUMINUM  
              OR ALUMINIUM)  
L110          12 S   L109 NOT L108  
L111          0 S   L110 AND 2002-2005/PY  
              D L110 ALL TOT